

This listing of claims will replace all prior versions, and listings of claims in the application.

**In the Claims:**

1. (previously presented) A method for increasing *Agrobacterium* transformation efficiency in a host plant, said method comprising:
  - a. increasing histone levels in the host plant compared to normal levels of histone in the host plant;
  - b. transforming the host plant with *Agrobacterium*; and
  - c. increasing the transformation efficiency of the host plant.
2. (original) The method of claim 1, wherein the histone is an H2A histone.
3. (original) The method of claim 2 wherein the H2A histone is encoded by *Arabidopsis RAT5*.
4. (original) The method of claim 1 wherein transformation frequencies are measured by the number of tumors produced in the host plant.
5. (original) The method of claim 2, wherein the H2A histone is H2A-1.
6. (withdrawn) A plant cell with an overexpression of plant histones sufficient to increase efficiency of transformation of the plant cell by *Agrobacterium*.
7. (withdrawn) The plant cell of claim 6 wherein the plant histones are of the H2A histone family.
8. (withdrawn) The plant cell of claim 7 wherein an H2A histone is encoded by *Arabidopsis RAT5*.
9. (previously presented) A method of increasing *Agrobacterium* transformation efficiency in a host plant, the method comprising:
  - (a) introducing at least one copy of a polynucleotide sequence encoding a plant histone protein to the host plant;
  - (b) selecting a host plant expressing the polynucleotide sequence encoding a plant histone protein;
  - (c) transforming the host plant expressing the polynucleotide sequence encoding a plant histone protein with a DNA molecule of interest using *Agrobacterium*; and

- (d) increasing the transformation efficiency of the host plant.
10. (original) The method of claim 9, wherein the host plant is a monocot plant.
11. (original) The method of claim 10, wherein the monocot plant is maize.
12. (original) The method of claim 9, wherein the polynucleotide sequence encoding a plant histone protein is a member of an H2A gene family of *Arabidopsis*.
13. (original) The method of claim 12, wherein the member of the H2A gene family of *Arabidopsis* is *RAT5*.
14. (currently amended) The method of claim 10 further comprising adding L-cysteine at a concentration about between 100 mg/L and 400 mg/L to media used in cultivating the host plant, wherein the host plant is monocot.
15. (withdrawn) A transgenic plant comprising at least one additional copy of a polynucleotide sequence encoding a plant histone H2A protein.
16. (currently amended) A method for increasing stable *Agrobacterium* transformation efficiency in a monocot host plant, the method comprising:
- (a) introducing a nucleic acid sequence encoding a plant histone H2A into a host plant;
- (b) selecting a host plant material expressing the plant histone H2A protein;
- (c) infecting the host plant material with a DNA molecule of interest by infection with an *Agrobacterium* strain;
- (d) providing at least one antioxidant in a cocultivation medium, wherein the antioxidant is L-cysteine at a concentration about between 100 mg/L and 400 mg/L of cocultivation media;
- (e) selecting the infected material for transformants expressing the DNA molecule of interest; and
- (f) increasing the transformation efficiency in the monocot plant.
17. (original) The method of claim 16, wherein the monocot plant is maize.
18. (canceled) ~~The method of claim 16, wherein the antioxidant is L-cysteine.~~
19. (canceled) ~~The method of claim 18, wherein the L-cysteine is at a concentration about between 100 mg/L and 400 mg/L of cocultivation media.~~

20. (original) The method of claim 16, wherein the infecting of the host plant in the cocultivation medium is for about 3 days.
21. (previously presented) The method of claim 16 wherein the host plant material is an embryo.
22. (withdrawn) A genetic construct comprising at least one copy of a histone gene that when expressed is capable of increasing transformation frequencies in a host plant.
23. (withdrawn) The genetic construct of claim 22, wherein the histone gene is H2A.
24. (withdrawn) A host cell transformed by at least one copy of a gene involved in T-cell integration wherein the gene is capable of effecting overexpression of histone to enhance plant transformation frequencies.
25. (withdrawn) The host cell of claim 24, wherein the gene is the *RAT5* gene of *Arabidopsis*.